

YUHU GROUP (AUSTRALIA) PTY LTD

TRANSPORT REPORT FOR  
PROPOSED MIXED USE  
DEVELOPMENT,  
144-186 ROWE STREET,  
EASTWOOD

AUGUST 2016

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## I. INTRODUCTION

- I.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by Yuhu Group (Australia) Pty Ltd to assess the transport implications of a proposed redevelopment of the Eastwood shopping centre for a mixed use development. The site is located at 144-186 Rowe Street, Eastwood as shown in Figure 1.
- I.2 Eastwood Shopping Centre currently comprises some 14,700m<sup>2</sup> retail space, 2,400m<sup>2</sup> commercial space and parking for 463 cars. Vehicular access to the site is provided to/from Trelawney Street, West Parade and Rutledge Street. The site has an existing loading dock with access from West Parade. It is proposed to redevelop the site for a mixed use development comprising some 11,900m<sup>2</sup> retail, 3,300m<sup>2</sup> commercial, gym (some 350m<sup>2</sup>), medical centre (some 675m<sup>2</sup>) and 443 residential units with parking for some 1,110 cars. Access will be maintained to Trelawney Street, West Parade and Rutledge Street.
- I.3 In 2010, Ryde Council approved redevelopment of the Eastwood Shopping Centre to provide some 14,600m<sup>2</sup> retail/restaurant, 2,200m<sup>2</sup> commercial, some 200 residential units, and parking for 994 cars. Car park access to the approved development was from Trelawney Street, West Parade and Rutledge Street (a new right turn bay on Rutledge Street for right turn ingress to the site). Service access was approved from Rutledge Street. The approved development was assessed as having an increase in traffic generation of 180 vehicles per hour (two way) in the weekday afternoon and Saturday peak periods
- I.4 Prior to preparing this traffic report, discussions regarding the appropriate level of traffic assessment of the proposed development were undertaken with RMS and Council. RMS indicated that traffic modelling of intersections along Rutledge
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Street (between Shaftsbury Road and East Parade) was required, in particular to assess the impact of the right turn ingress from Rutledge Street. Council indicated that a broader traffic assessment of the town centre was required involving micro simulation modelling. Due to timing constraints, traffic modelling is still being undertaken and likely to be completed in two stages (RMS traffic assessment to be completed first followed by the broader area assessment requested by Council). Therefore, the traffic assessment in this report is an overview, with a more detailed traffic assessment to be provided in supplementary reports, once the traffic modelling is completed.

1.5 The transport implications of the proposed development are set down through the following chapters:

- Chapter 2 - describing the existing conditions; and
- Chapter 3 - assessing the implications of the proposed development.

## 2. EXISTING CONDITIONS

### Site Location

- 2.1 The site is located on the southern edge of the Eastwood town centre. It has frontage to Rutledge Street, West Parade, Trelawney Street and Rowe Street Mall. The shopping centre currently comprises some 14,700m<sup>2</sup> retail space, 2,400m<sup>2</sup> commercial space and parking for 463 cars. Access is provided to the main car park area (418 spaces above the retail space) from Trelawney Street and West Parade. A smaller car park of 45 spaces has access from Rutledge Street. The site has an existing loading dock with access from West Parade.
- 2.2 Surrounding land use is predominantly commercial within Eastwood town centre. South of the site (on the southern side of Rutledge Street) there is residential and commercial development. The site is close to Eastwood train station and bus interchange.

### Road Network

- 2.3 Rutledge Street is south of the site and provides an east west link between Blaxland Road and Marsden Road. In the vicinity of the site, Rutledge Street varies from a four lane undivided road to a six lane divided road, with additional turn lanes at major intersections. Clearway conditions apply at peak times. The intersections of Rutledge Street with Shaftsbury Road, Trelawney Street and East Parade are traffic signal controlled. Access to the site from Rutledge Street is limited to left turns in and out. In the vicinity of the site, Rutledge Street carries peak hour traffic flows of some 3,000 vehicles per hour (two way).
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- 2.4 Trelawney Street runs in a north south direction to the west of the site. Between Rowe and Rutledge Streets, it has two travel lanes in each direction with no on street parking permitted. All turning movements are permitted to the site at the Trelawney Street access. In the vicinity of the site, Trelawney Street carries peak hour traffic flows of some 1,000 vehicles per hour (two way).
- 2.5 Rowe Street runs in an east west direction to the north of the site. Between The Avenue and West Parade (along the frontage of the site) Rowe Street is a pedestrian mall. West of Trelawney Street, Rowe Street is one way westbound. In the vicinity of the site, Rowe Street carries peak hour traffic flows of some 650 vehicles per hour (two way).
- 2.6 West Parade runs in a north south direction to the east of the site. A service ramp connects West Parade to Rutledge Street. General traffic access between Rutledge Street and West Parade is limited to left turns. The site has access to this service ramp, with all turning movements permitted. The service ramp has one traffic lane in each direction. In the vicinity of the site, West Parade carries peak hour traffic flows of some 900 vehicles per hour (two way).

#### Intersection Operation

- 2.7 Detailed peak period intersection counts and analysis of the operation of key intersections in the peak periods will be undertaken as part of the traffic modelling requested by RMS and Council. The results of these surveys and analysis of existing conditions will be presented in the supplementary traffic reports.
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- 2.8 Observations of peak period traffic conditions have noted congestion along Rutledge Street in both directions during peak periods. This is primarily due to the phasing of the traffic signals at the intersections of Rutledge Street with Shaftsbury Road and Trelawney Street and that right turns into these streets reduce westbound traffic on Rutledge Street to one through lane.

#### Public Transport

- 2.9 Public transport to Eastwood town centre is provided by buses and trains. The train station is located adjacent to the site on the eastern side of West Parade. Eastwood Station is located on the main northern line which connects the CBD and Hornsby (via Strathfield) with regular services (every 30 minutes) in non-peak times and higher frequency services in the commuter peak periods.
- 2.10 Sydney Buses operate a number of services to/from Eastwood town centre. These are Routes 515, 521, 541, 543, 544, 545, 550, 551, N80 and X15. These routes service the local area, as well as providing connections to other centres such as Macquarie Park, Ryde Town Centre, Parramatta and the CBD.
- 2.11 These services operate at regular intervals during the day with additional services in the commuter peak periods. Thus the site is well served by local and regional public transport services.

#### Pedestrians

- 2.12 Pedestrian access to Eastwood Shopping Centre is provided from Rowe Street Mall and Rutledge Street. Within the site, pedestrian access is provided from the car parking areas to the shops via internal ramps. Existing pedestrian infrastructure
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on the surrounding roads consists of footpaths and pedestrian facilities (at the signalised intersections along Rutledge Street and marked foot crossings on Rowe Street and West Parade).



### 3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 It is proposed to redevelop the site for a mixed use development comprising some 11,100m<sup>2</sup> retail, 2,600m<sup>2</sup> commercial, gym (some 350m<sup>2</sup>), medical centre (some 685m<sup>2</sup>) and 443 residential units (167 x 1 bed, 255 x 2 bed and 21 x 3+ bed) with parking for some 1,110 cars located within four levels of basement parking. Access will be maintained to Trelawney Street, West Parade and Rutledge Street.

3.2 This chapter assesses the implications of the proposed development through the following sections:

- ❑ public transport;
- ❑ parking provision;
- ❑ access, servicing and internal layout;
- ❑ traffic generation and effects;
- ❑ summary.

#### Public Transport

3.3 As previously discussed, the site is close to Eastwood train station and bus interchange and therefore is highly accessible by public transport services. Thus residents, employees and shoppers will have opportunities to travel to the site by means other than private car.

3.4 The proposed development would increase residential densities close to existing public transport services. The proposal would therefore strengthen the existing

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demand for these services. To support accessibility for cyclists, appropriate parking for bicycles will be provided.

3.5 The proposed development is therefore consistent with government objectives and the planning principles of:

- (a) improving accessibility to employment and services by walking, cycling, and public transport;
- (b) improving the choice of transport and reducing dependence solely on cars for travel purposes;
- (c) moderating growth in the demand for travel and the distances travelled, especially by car; and
- (d) supporting the efficient and viable operation of public transport services.

3.6 Pedestrian access to the shopping centre will be maintained from Rowe Street, with a through site link to Rutledge Street and West Parade. This is an improvement on existing conditions and will also improve access to Eastwood town centre in general. Pedestrian access within the car park will be improved with dedicated pedestrian paths, ramps, revealers and a lift.

#### Parking Provision

3.7 Ryde City Council's DCP 2014 has the following parking requirements relevant to the proposed development:

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- ❑ Retail – 1 space per 25m<sup>2</sup> GFA;
  - ❑ Commercial – 1 space per 40m<sup>2</sup> GFA; and
  - ❑ High Density Residential:
    - 0.6 to 1 space per one bed unit;
    - 0.9 to 1.2 spaces per 2 bed unit;
    - 1.4 to 1.6 spaces per 3 bed unit; and
    - 1 space per 5 units visitor parking.
  - ❑ Gym – 1 to 1.5 spaces per 20m<sup>2</sup> GFA.
  - ❑ Medical Centre:
    - 1 space per doctor; plus
    - 1 space per 2 employees; plus
    - 1 patient space per doctor/dentist.

3.8 Applying these rates the proposed development would require 449 to 596 residential spaces (including 89 visitor spaces), 444 retail spaces, 65 commercial spaces and 17 to 26 gym spaces. For the medical centre the number of doctors and staff is unknown, hence the RMS rate of 4 spaces per 100m<sup>2</sup> has been applied, resulting is a requirement for 27 spaces. Thus the proposed development would require a minimum of 1,002 spaces. A total of some 1,110 spaces will be provided, satisfying the minimum requirements of DCP 2014.

3.9 Parking would be provided within four basement parking levels with the two lowest levels (571 spaces) allocated to residential (513 spaces), commercial (14 spaces) and some 50% of the residential visitor parking (44 spaces). With 443 units, each unit would be allocated a parking space, with the 3 bedroom and 49 two bed units being allocated 2 parking spaces. Tandem and small car spaces would be allocated as the second space to a 3 bedroom unit or a 2 bedroom unit with two car spaces.

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- 3.10 The two upper basement levels (539 spaces) would be allocated to retail parking (444 spaces), commercial parking (51 spaces), gym parking (17 spaces) and medical centre parking (27 spaces). The retail, gym and medical centre parking would be unallocated within a central pool of parking. Some tandem spaces would be allocated to retail tenants as employee parking. Commercial parking on levels B1 and B2 would be located in dedicated areas accessed by boom gates. The balance of visitor parking (45 spaces) would be shared within the retail car park on levels B1 and B2, allowing for dual use of these spaces. Peak visitor parking occurs in the evening while peak retail parking occurs during the midday period. As noted above, 50% of visitor parking would be available at all times within the levels B3 and B4.
- 3.11 The above parking provision includes disabled parking spaces (86 residential spaces, 2 residential visitor, 1 commercial and 16 retail spaces). In addition 29 motorcycle spaces will be provided. As per DCP 2014, some 60 non-residential bicycle spaces will be provided within the basement car park (mix of employee and visitor spaces) and at street level (visitor spaces). Residential bicycle parking will be accommodated within each units storage area.

#### Access, Servicing and Internal Layout

- 3.12 The access and internal layout are proposed to be modified as follows:
- ❑ replace the existing upper level parking with four basement levels of parking;
  - ❑ modify the car park access from Rutledge Street and Trelawney Street. The Rutledge Street access would be relocated to the east and provision made for right turn ingress to the site (as per the previously approved development).
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The existing ramped access from Trelawney Street will be replaced with an at-grade access;

- ❑ direct access to all parking levels will be provided from Rutledge Street;
- ❑ direct access to levels B1 & B2 from Trelawney Street. Access to levels B3 & B4 would also be available from Trelawney Street through levels B1 & B2;
- ❑ direct egress to Trelawney Street from levels B3 & B4 will be provided via a one lane speed ramp; and
- ❑ modify and expand the loading dock accessed off West Parade to service the new development.

3.13 Car park driveways, internal access lanes and ramps will be designed in accordance with the requirements of AS2890.1-2004 with respect to width, grade and height clearances.

3.14 Within the car parks, Class 3A (high turnover) parking areas on levels B1 & B2 will provide parking bays 2.6 metres wide by 5.4 metres long with 6.6 metre wide aisles. Class 1/1A parking areas on all parking levels will provide parking bays 2.4 metres wide by 5.4 metres long with 5.8 metre wide aisles. Small spaces will be a minimum of 2.3 metres by 5.0 metres. Spaces with adjacent obstructions will be 0.3 metres wider. Disabled spaces will be 2.4 metres wide, with a 2.4 metre wide adjacent area for wheelchairs. Height clearance will be a minimum of 2.2 metres, with 2.5 metres above disabled spaces. These dimensions are appropriate, being in accordance with AS 2890.1:2004 and AS 2890.6:2009.

3.15 As part of the proposed development the existing loading dock accessed off West Parade will be expanded to accommodate nine service bays (including compactors), with a turn table provided to allow larger trucks to enter and depart the site in a forward direction. The service area will be designed to comply with

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the requirements of AS2890.2-2002. Truck turn paths are provided in Appendix A.

#### Traffic Generation and Effects

- 3.16 As noted in the previous chapters, detailed traffic analysis of the traffic impacts of the proposed development will be provided in the supplementary traffic reports when the traffic modelling requested by RMS and Council has been completed. Set out below is an estimate of the likely traffic generation of the proposed development and a comparison with the previously approved development on the site.
- 3.17 Estimates of traffic generation of the non-retail components of the proposed development are based on RMS Guidelines. The relevant RMS rates for the weekday afternoon peak hour are set out below:
- ❑ high density residential – 0.15 vehicles per hour per unit;
  - ❑ commercial – 1.2 vehicles per 100m<sup>2</sup> GFA;
  - ❑ gym – 3 vehicles per 100m<sup>2</sup> GFA; and
  - ❑ medical centre – 9 vehicles per 100m<sup>2</sup> GFA.
- 3.18 For the approved DA, RMS requested that for the retail component, traffic generation be based on the increase in retail parking (at a surveyed rate of 1 trip per retail space) as there was a minimal change in retail area and compared to larger increase in retail parking. For the proposed development there is a decrease in retail area and small increase in retail parking (12 spaces). Thus the same methodology for estimating retail traffic generation as previously suggested by RMS has been adopted for the retail component.
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- 3.19 Based on the above rates the proposed development would generate some 160 additional vehicles per hour (two way) in the weekday afternoon peak hour. This is similar to the previously approved development on the site (additional 180 additional vehicles per hour (two way)).

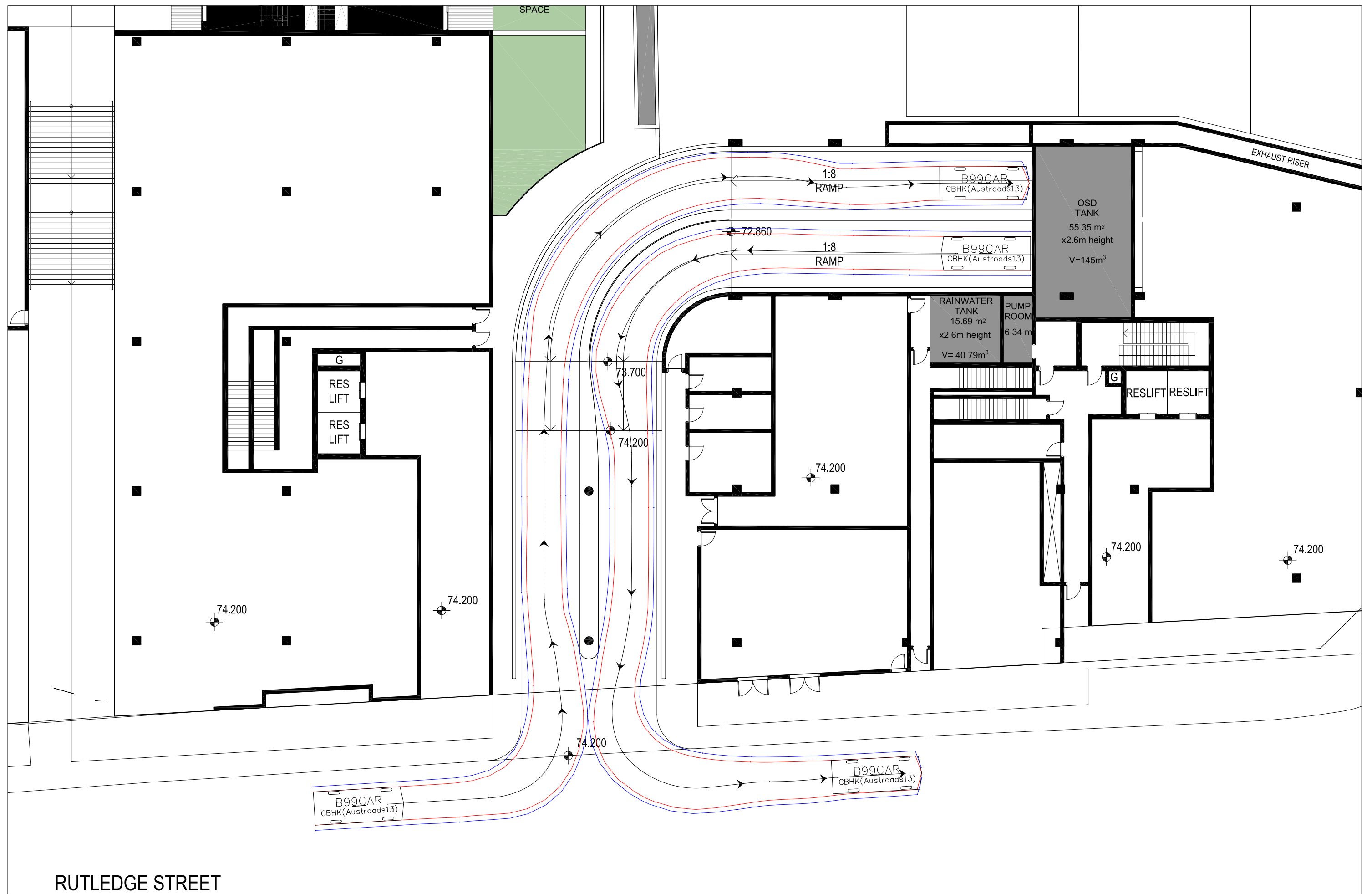
Summary

- 3.20 In summary, the main points relating to the transport implications of the proposed development are as follows:
- i) the proposed development would increase retail, commercial and residential densities close to good public transport services;
  - ii) the proposed parking provision is appropriate;
  - iii) access and internal layout are appropriate and will be designed to comply with the requirements of AS2890.1-2004, AS2890.2-2002 and AS2890.6-2009;
  - iv) the additional traffic generated by the proposed development will be similar to the previously approved mixed use development on the site; and
  - v) detailed traffic analysis of the traffic impacts of the proposed development will be provided in the supplementary traffic reports when the traffic modelling requested by RMS and Council has been completed.
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## APPENDIX A

### TRUCK TURNING PATHS

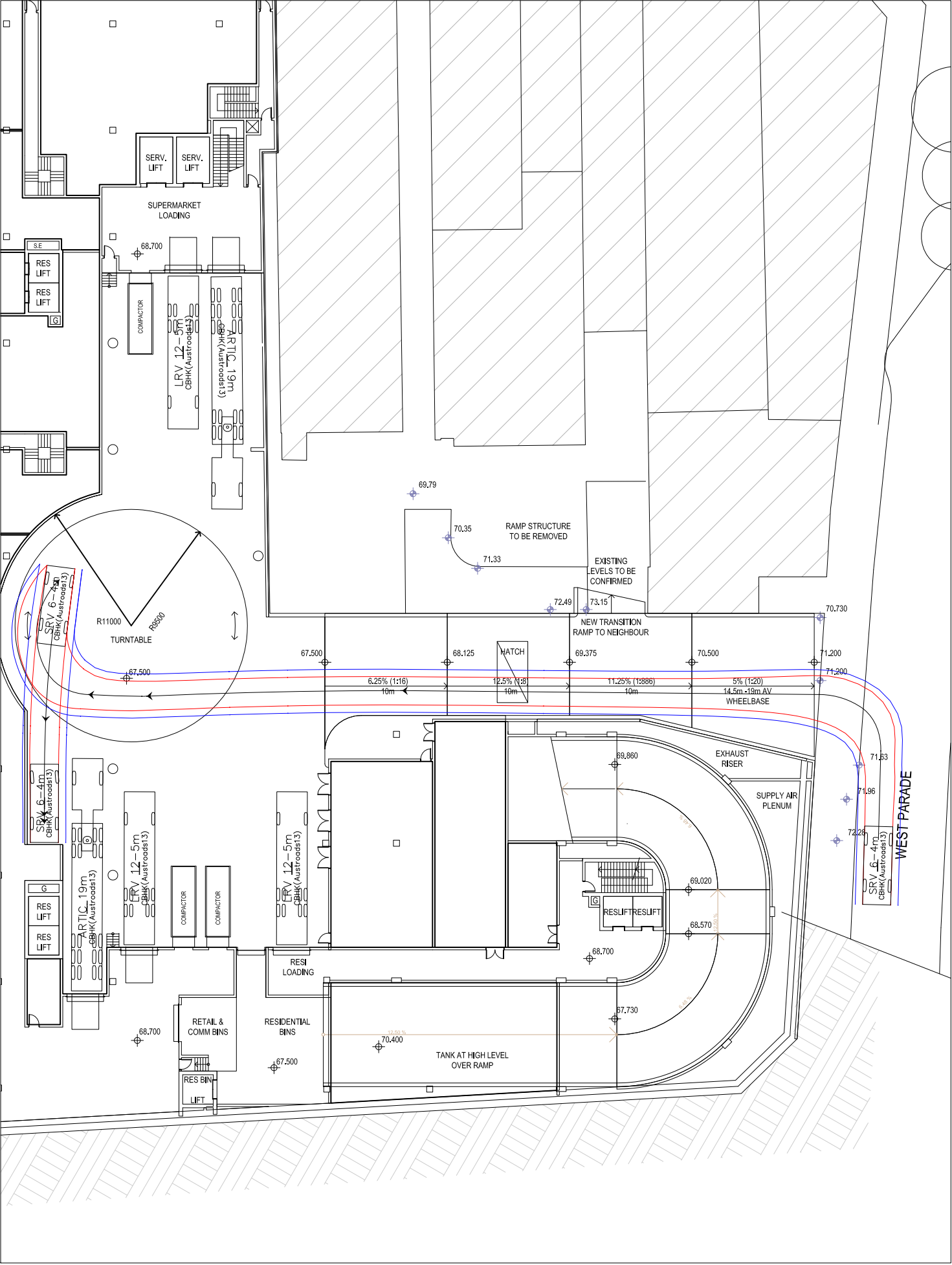




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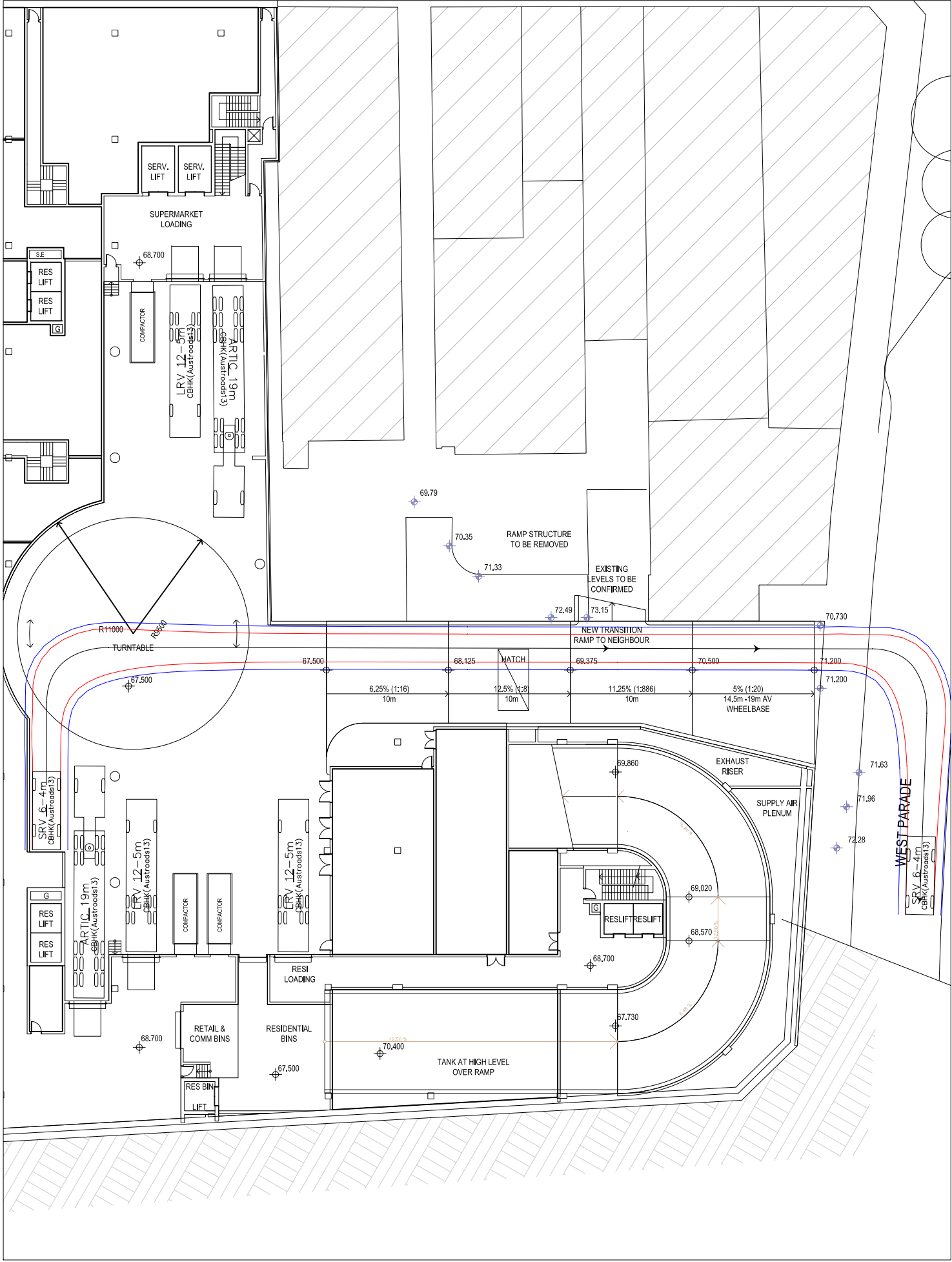
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 — Swept Path of Clearance to Vehicle Body

## B99 VEHICLE SWEPT PATHS

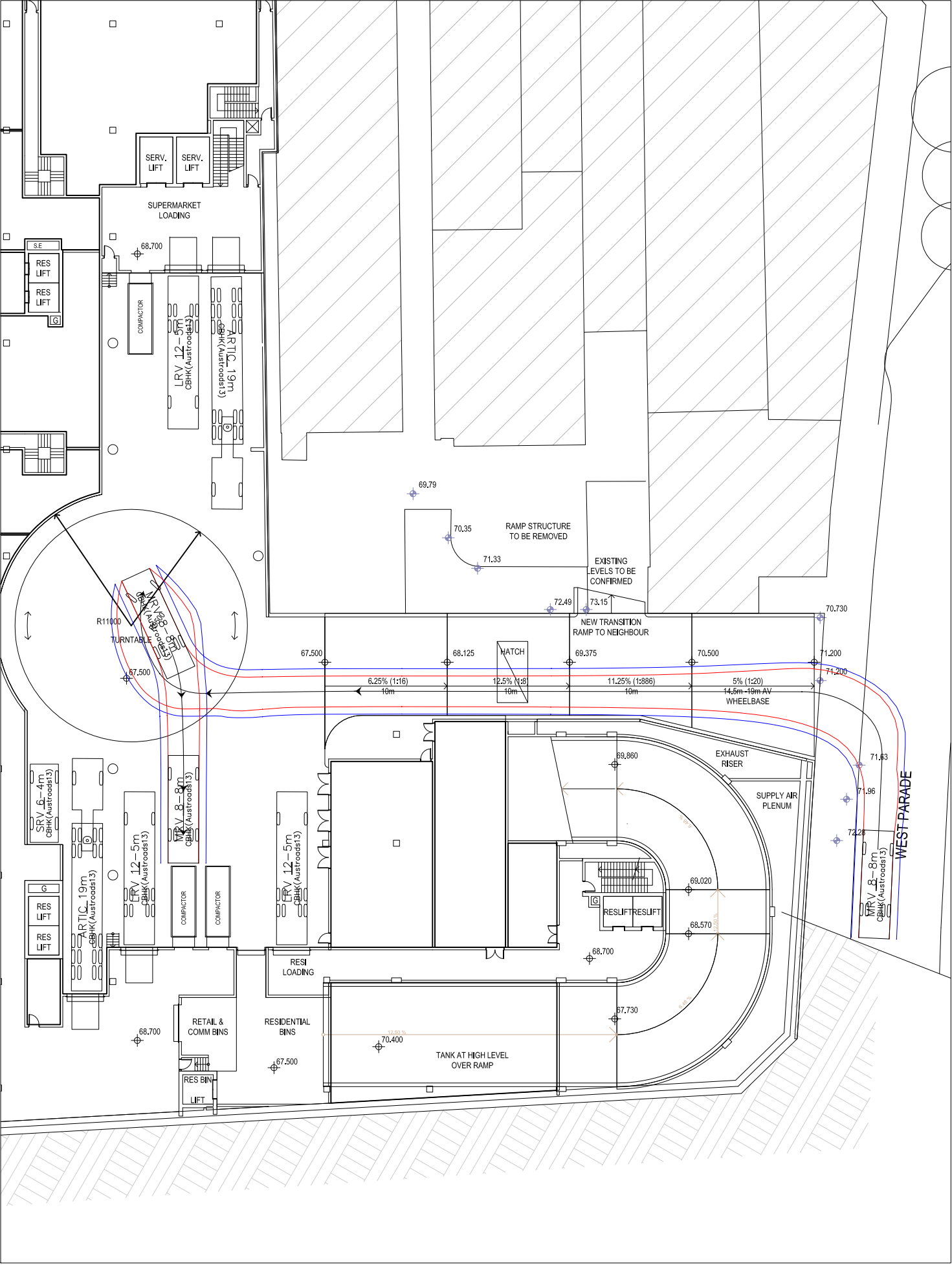


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— Swept Path of Vehicle Body  
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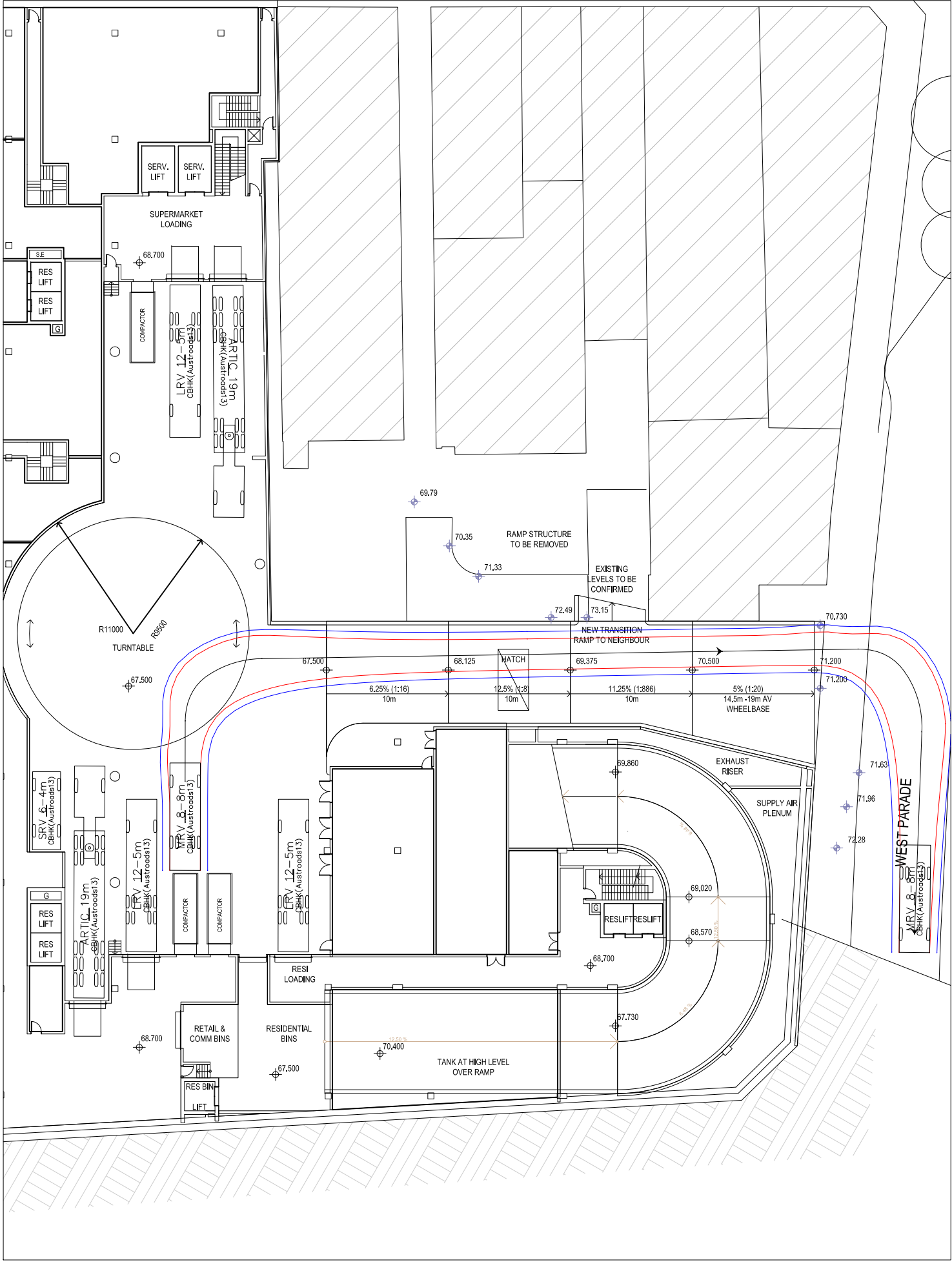


## 6.4m SMALL RIGID VEHICLE SWEPT PATHS

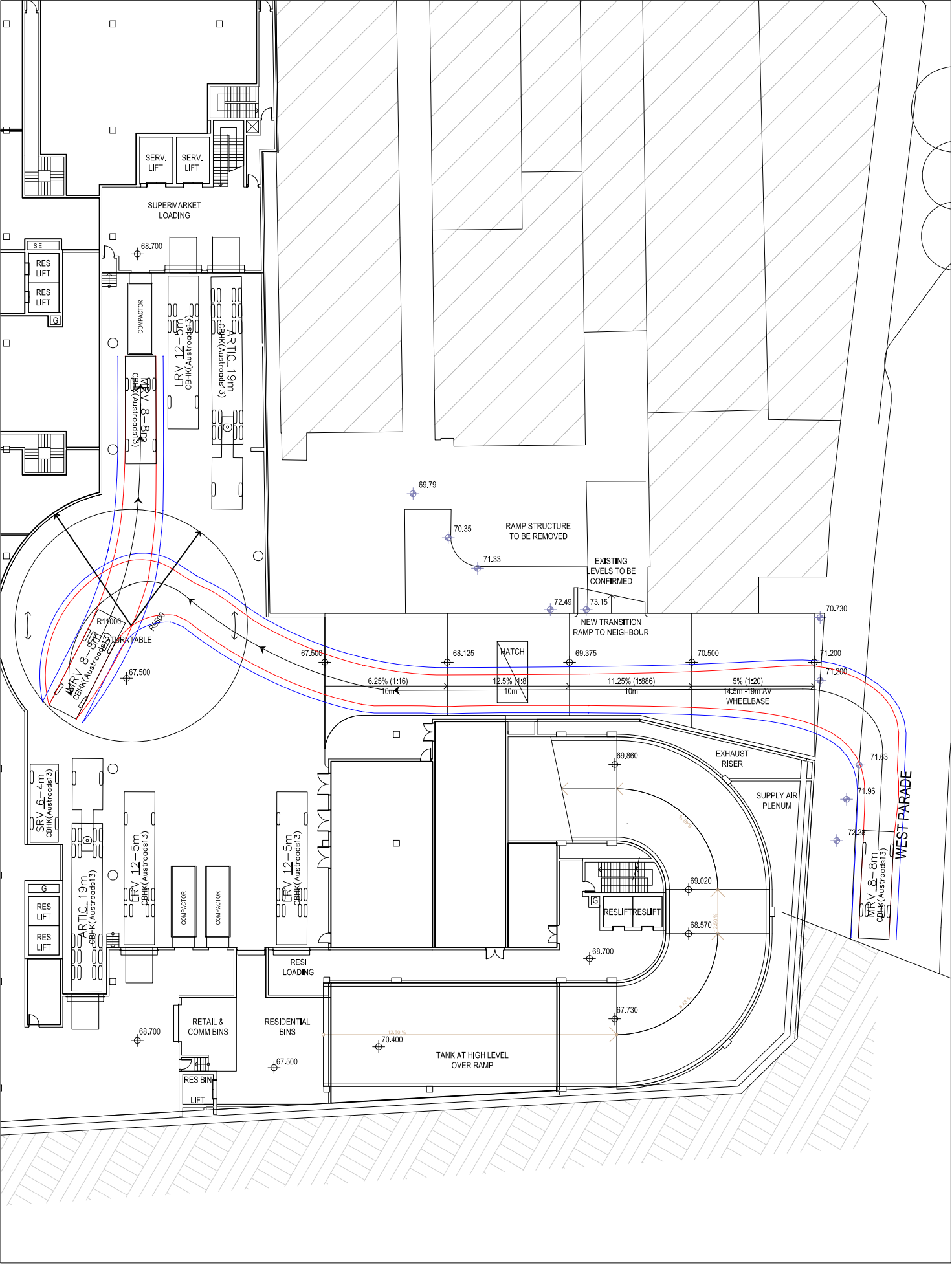


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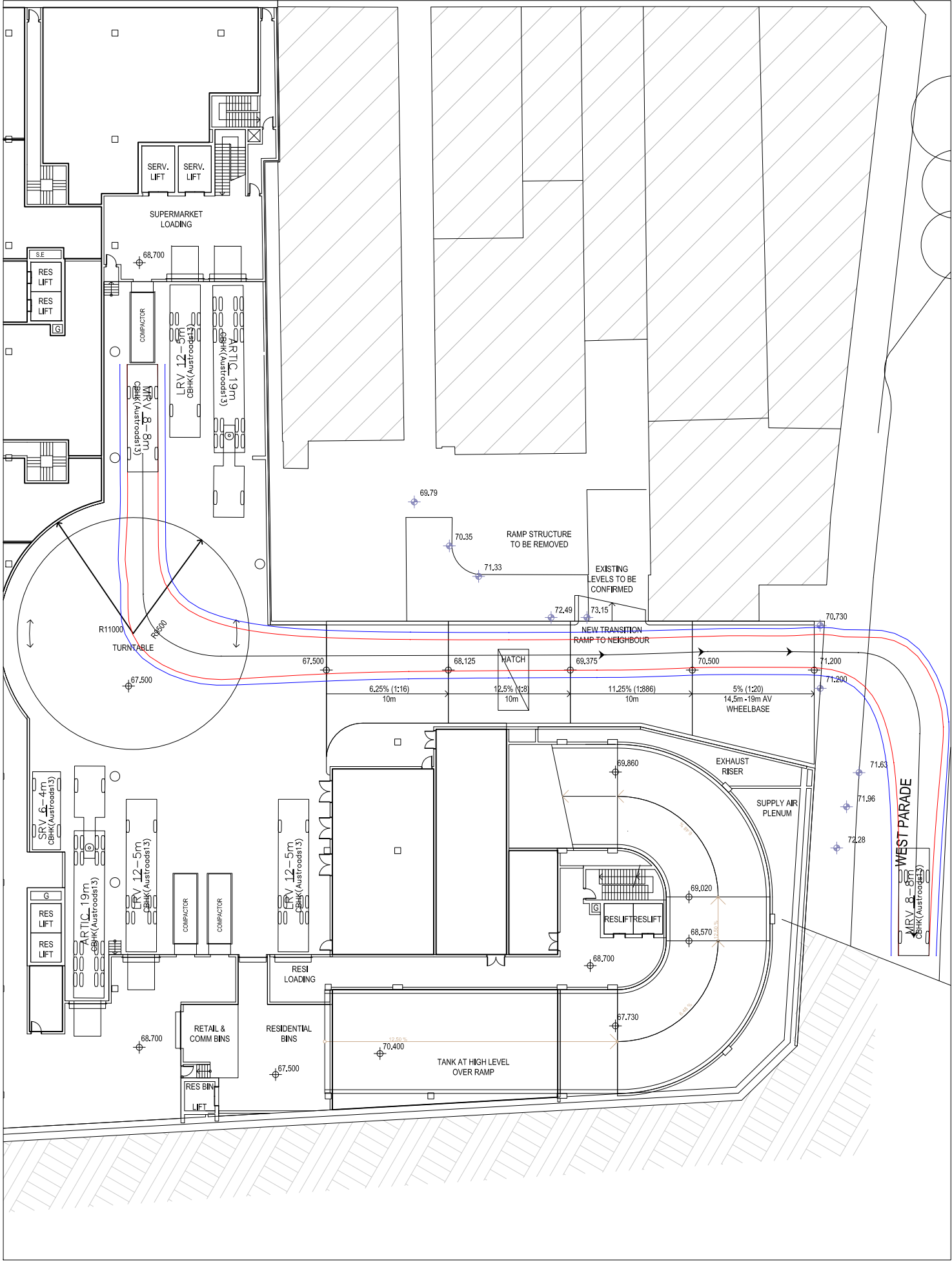


### 8.8m MEDIUM RIGID VEHICLE SWEPT PATHS



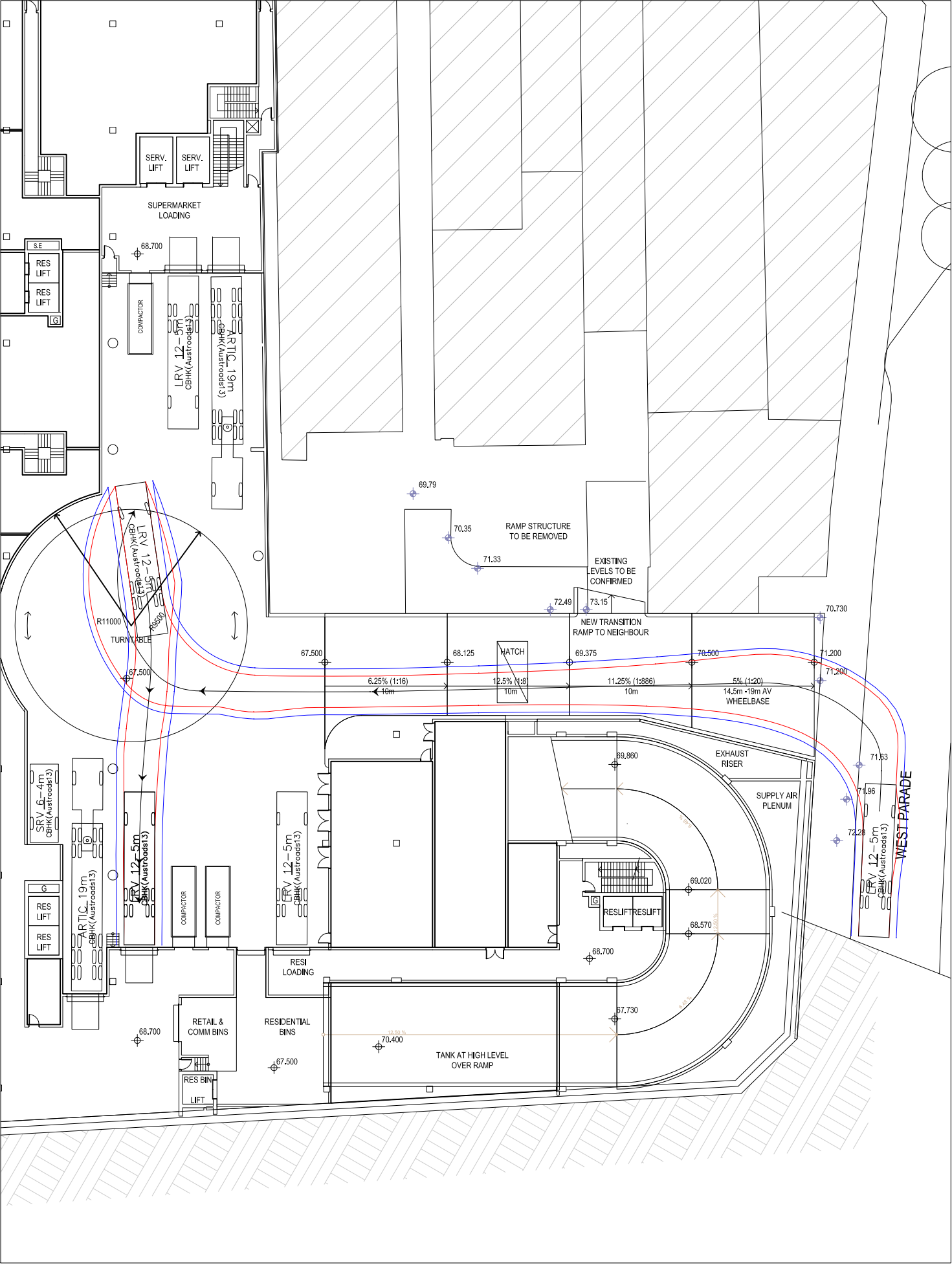
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— Swept Path of Vehicle Body  
 — Swept Path of Clearance to Vehicle Body



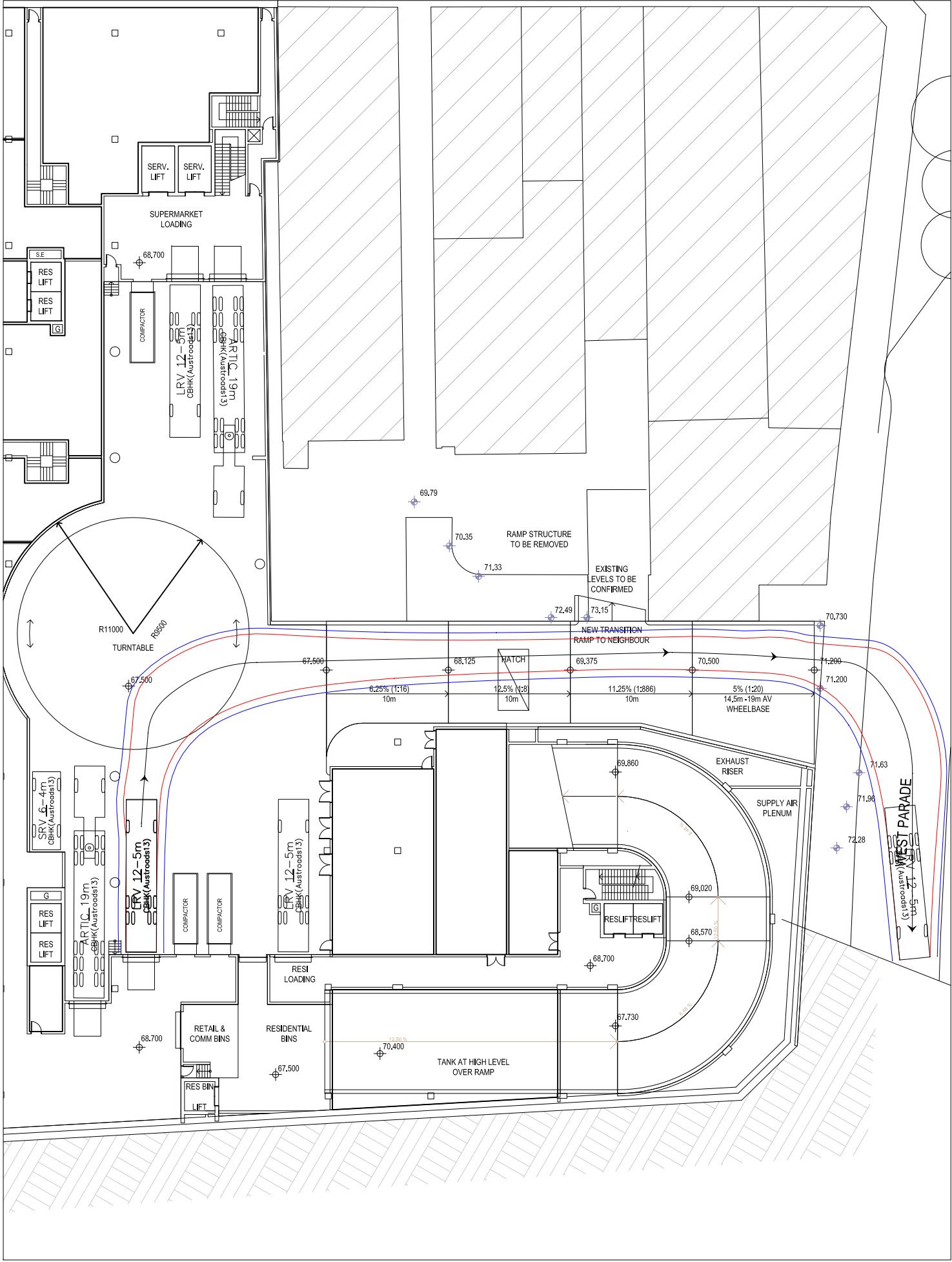
## 8.8m MEDIUM RIGID VEHICLE SWEEP PATHS



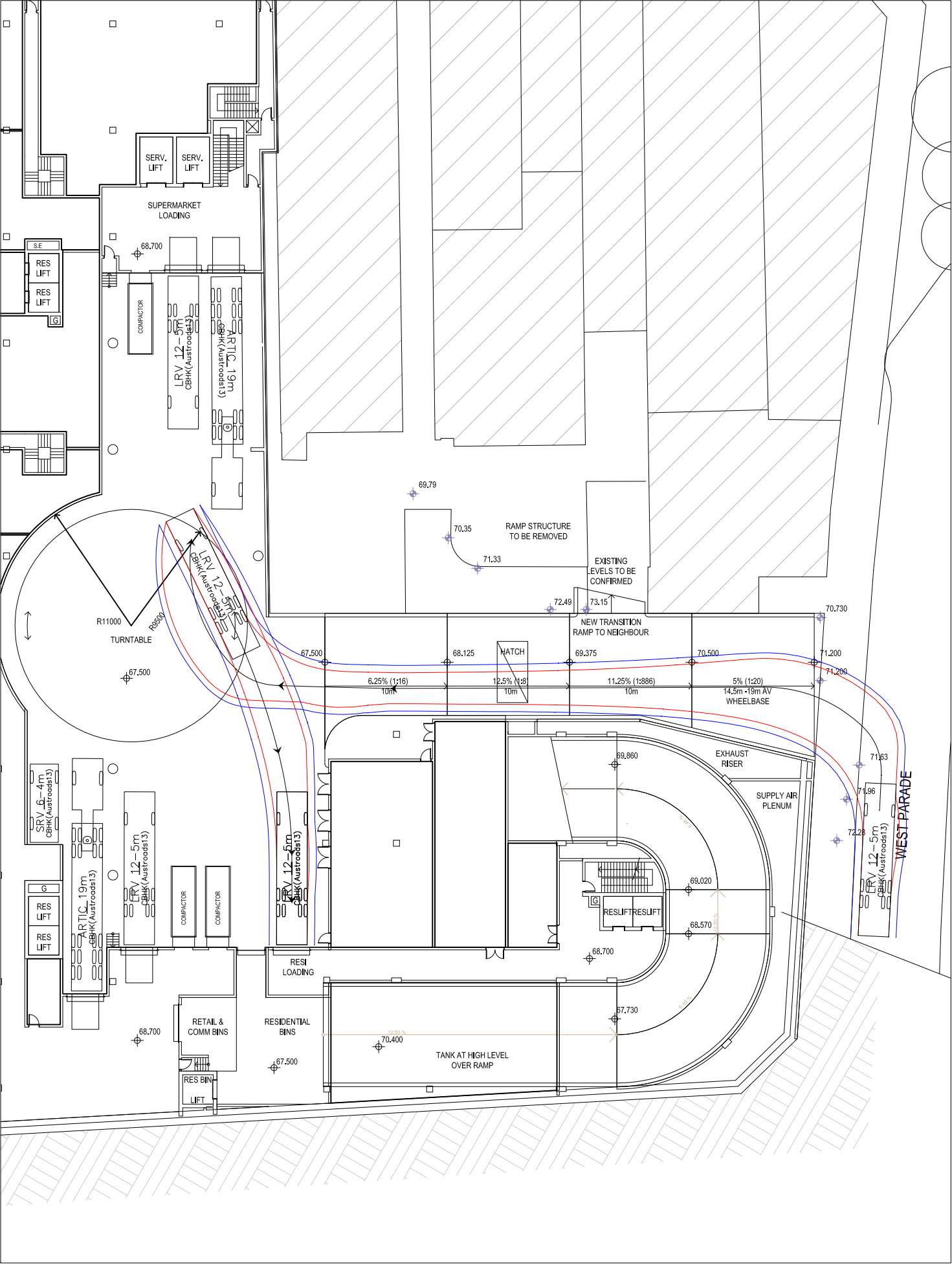


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— Swept Path of Vehicle Body  
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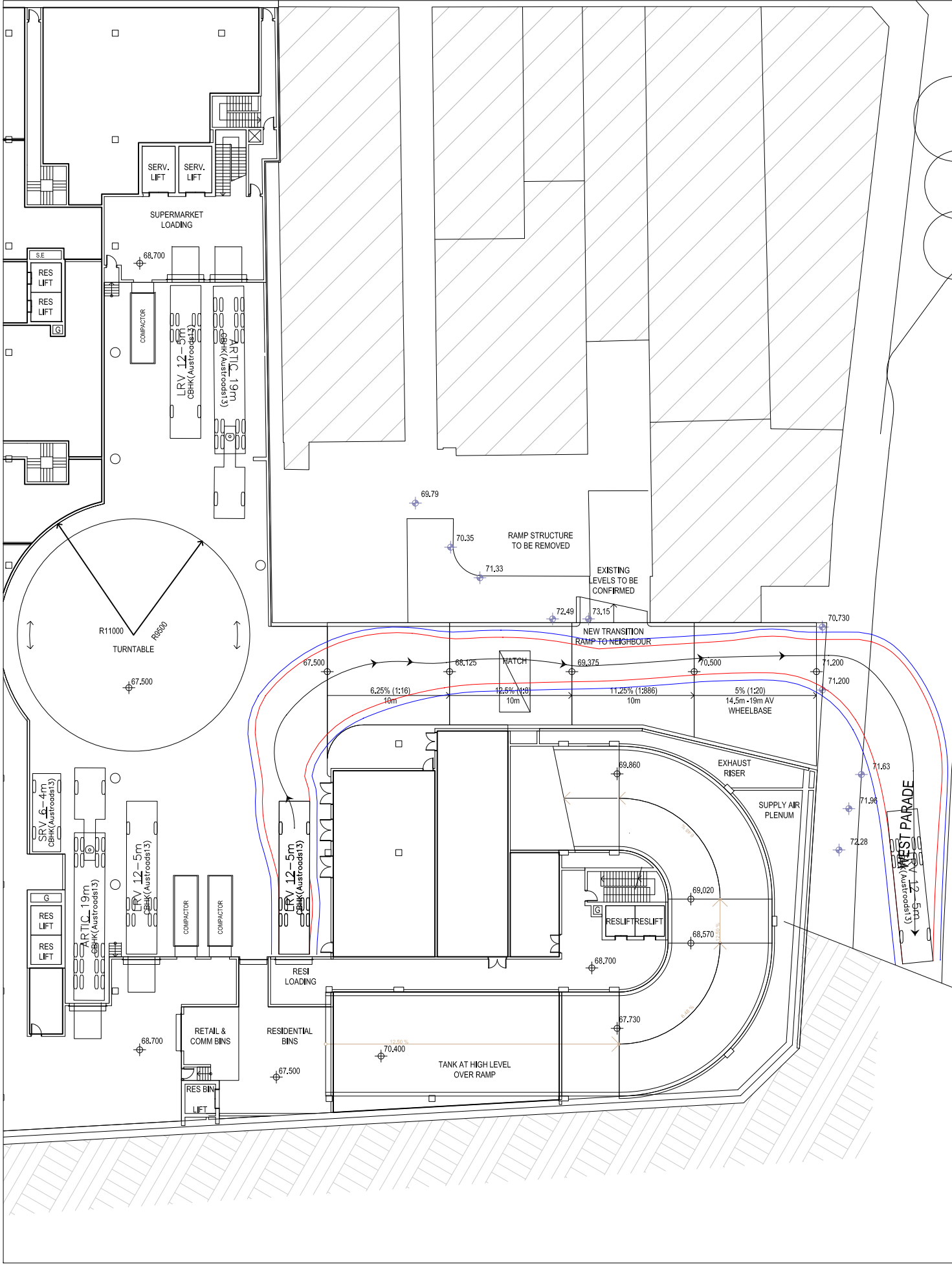


## 12.5m LARGE RIGID VEHICLE SWEPT PATHS

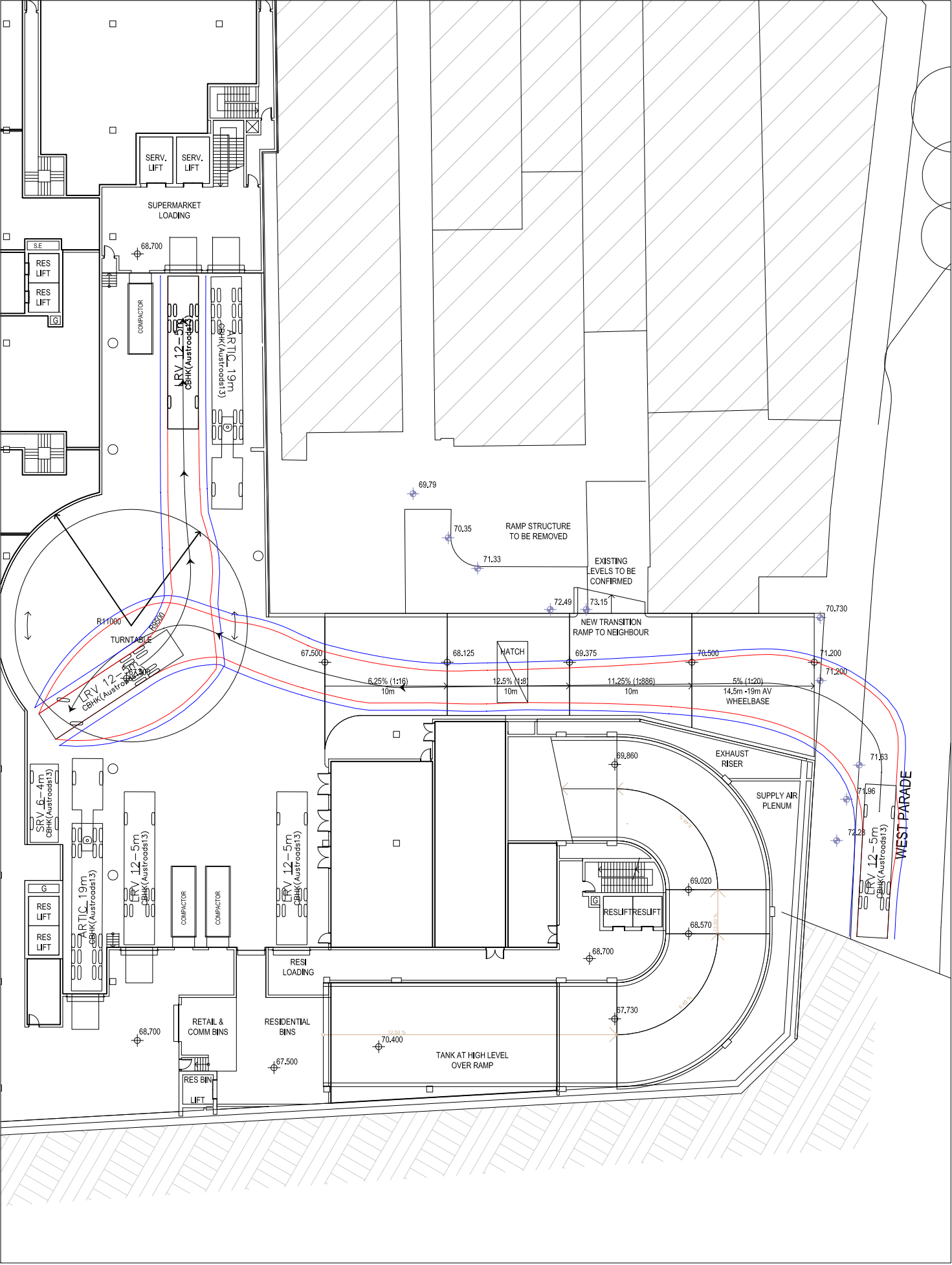


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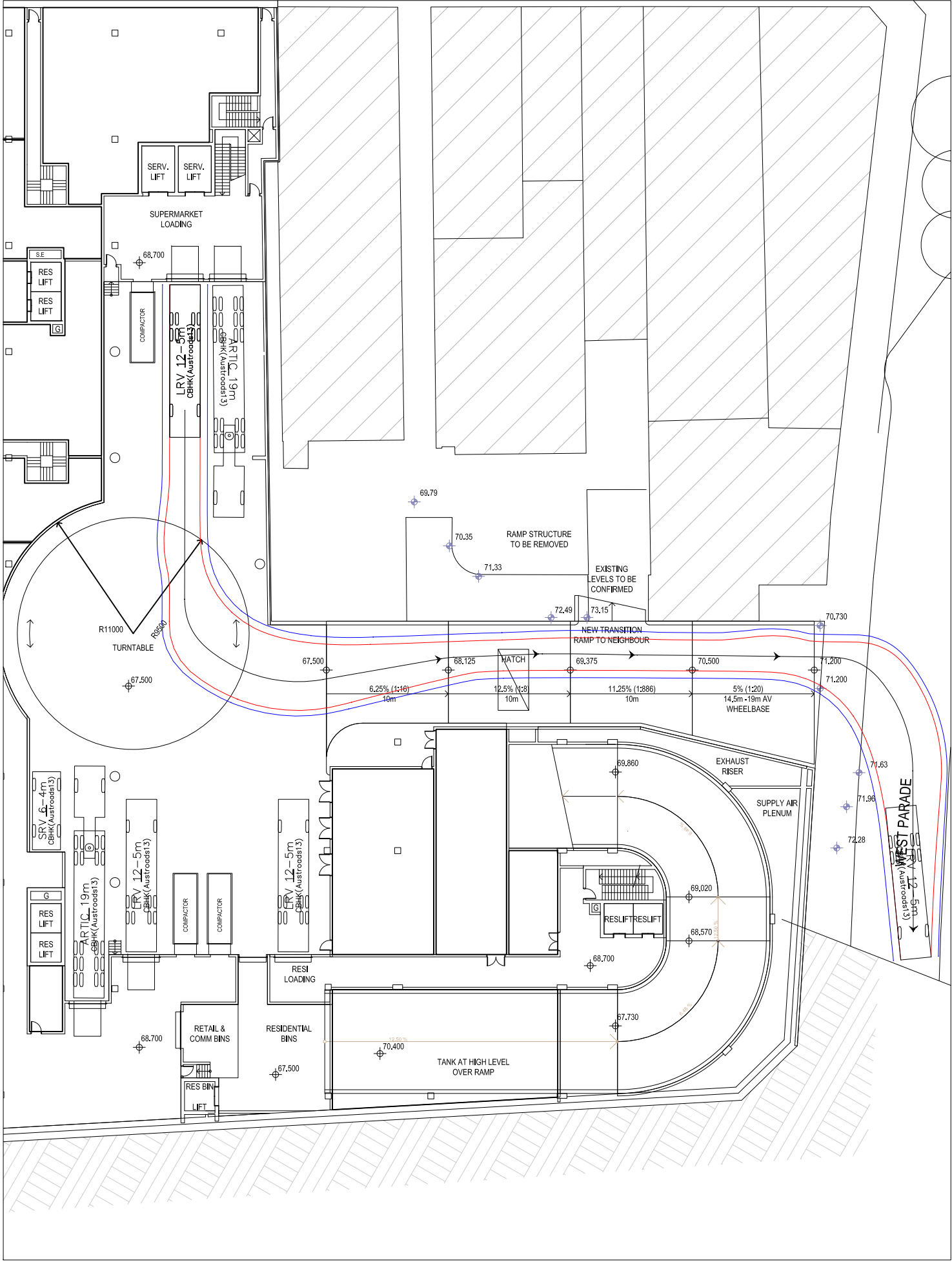


## 12.5m LARGE RIGID VEHICLE SWEPT PATHS



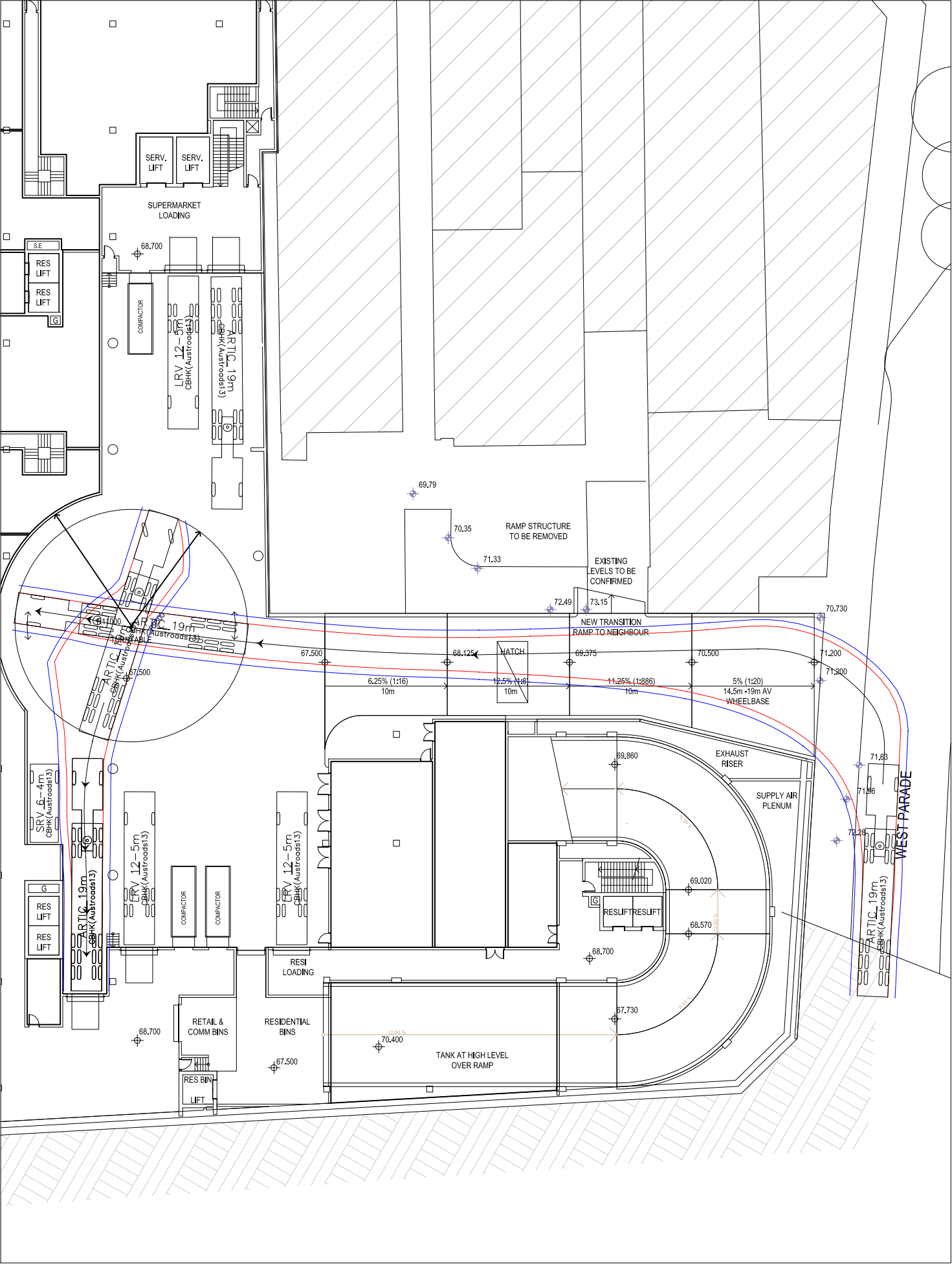
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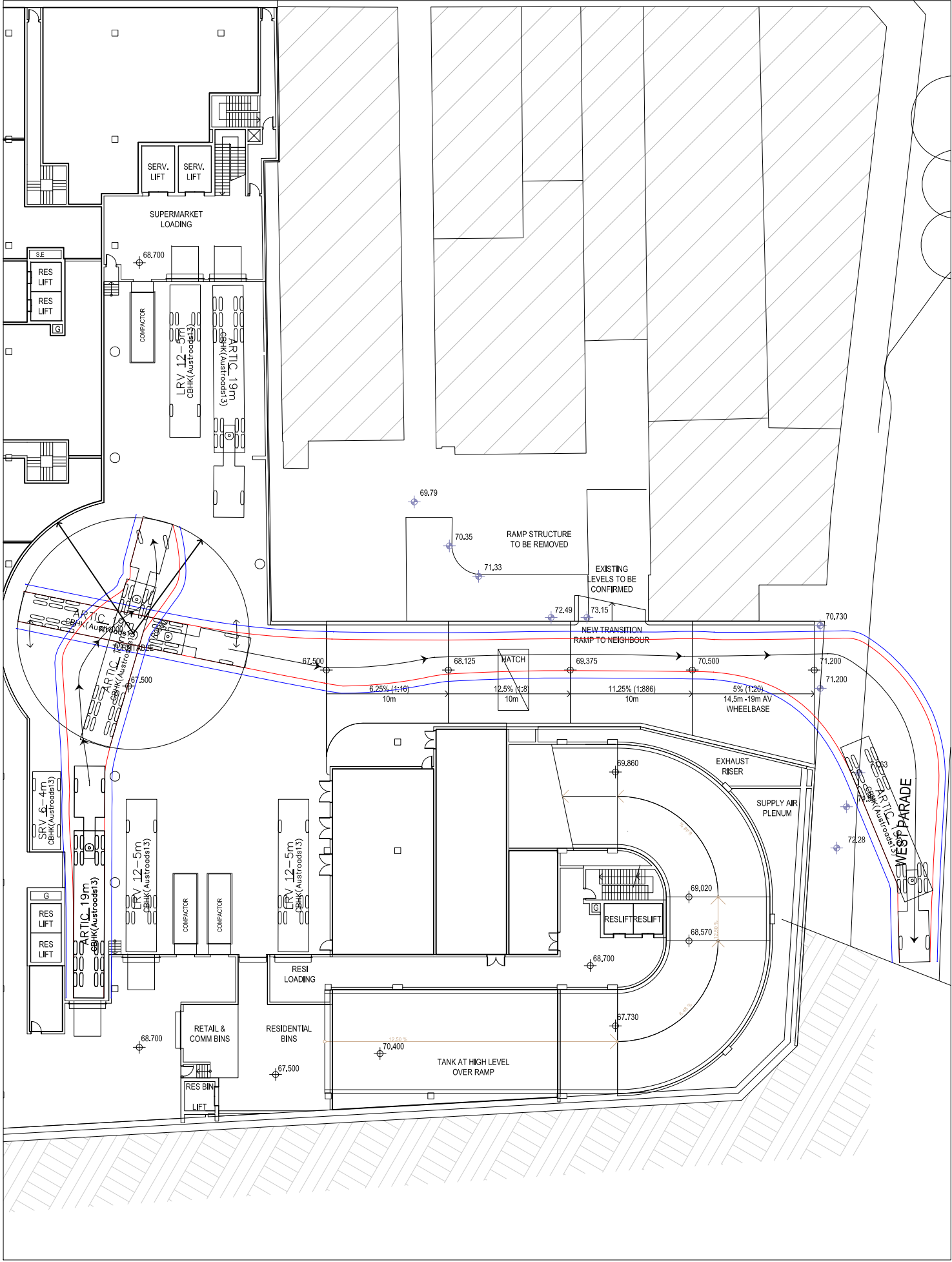
## 12.5m LARGE RIGID VEHICLE SWEPT PATHS





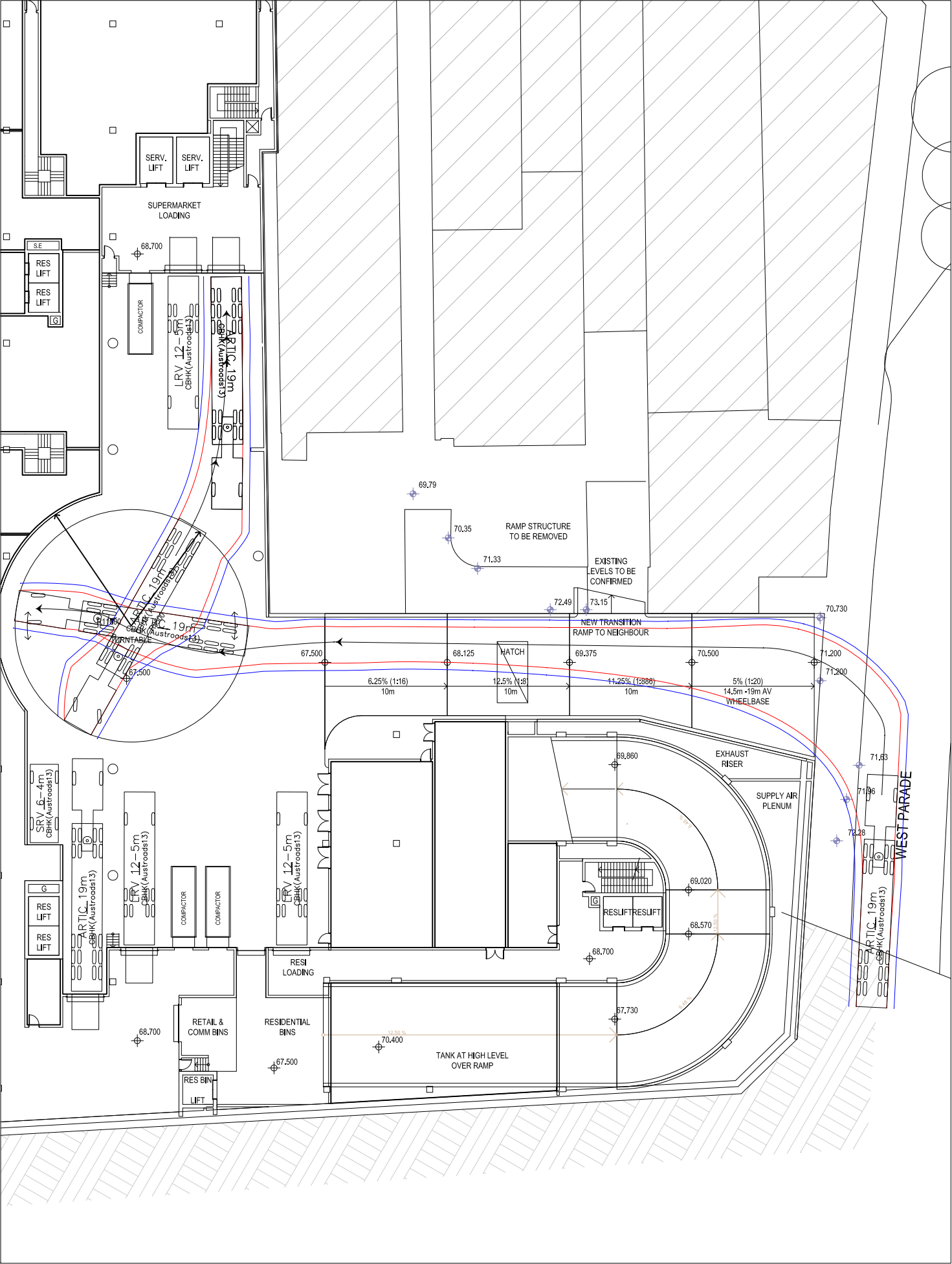
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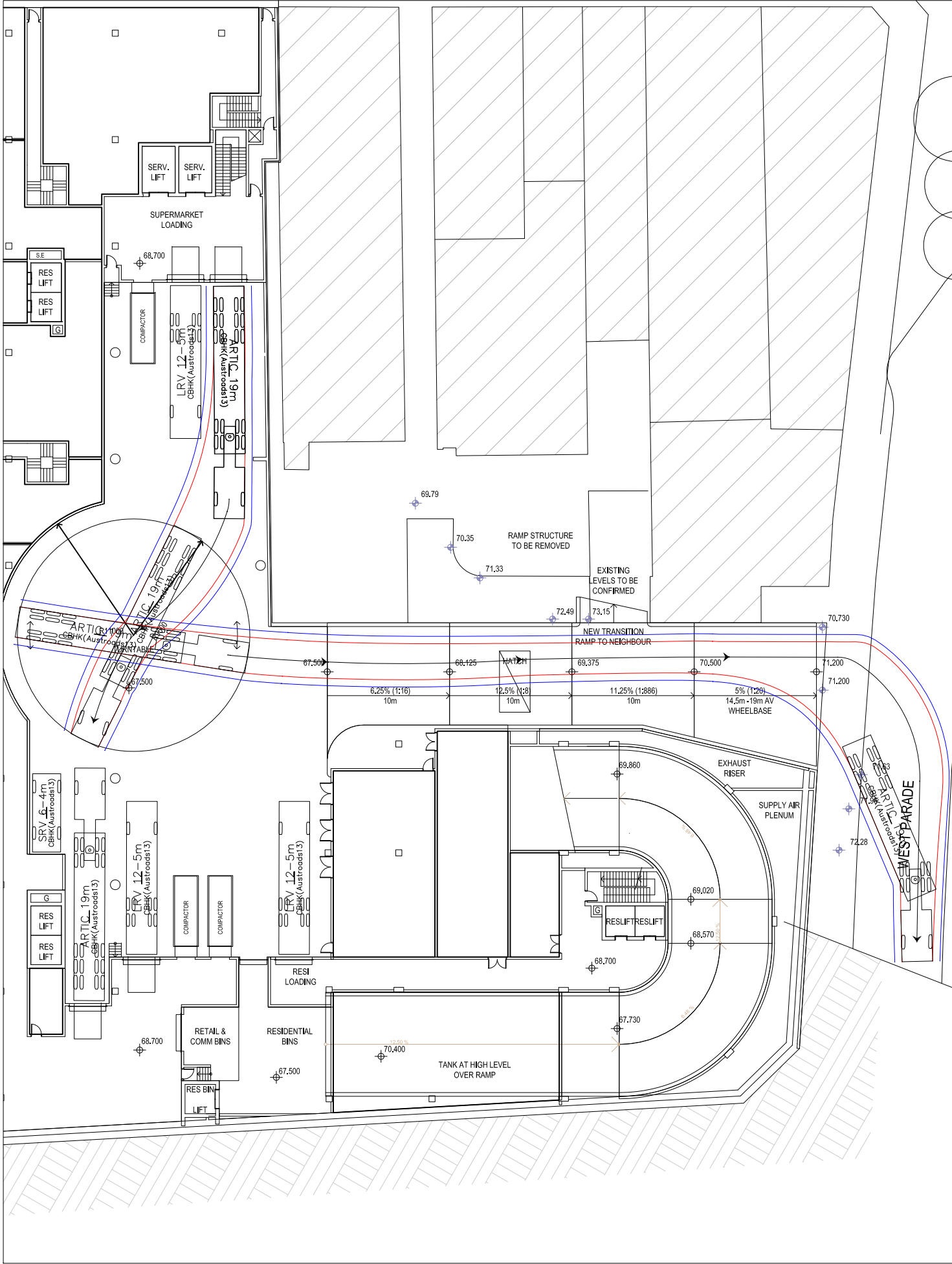
19.0m ARTICULATED  
VEHICLE SWEEP PATHS





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— Swept Path of Clearance to Vehicle Body



## 19.0m ARTICULATED VEHICLE SWEEP PATHS